

## **MULTIPLE MATERIAL VALVE PLUG FOR HIGH TEMPERATURE OPERATION**

### **ABSTRACT OF THE DISCLOSURE**

5           A valve assembly with a multiple-component valve plug is disclosed. The use  
of multiple materials in the construction of the valve plug provides different rates of  
thermal expansion in the axial and radial directions thereby enabling the valve plug to  
have thermal expansion characteristics that closely match that of the components in  
which it cooperates with. Specifically, the radial thermal expansion of the  
10   downstream end of the plug is closely matched to that of the retainer component  
which receives the downstream end of the plug. The radial thermal expansion of the  
upstream end of the plug is closely matched to that of the cage and seat ring to enable  
the plug to properly close or seat when the valve is in the closed position. The plug  
body or spacer tube has an axial thermal expansion that closely matches that of the  
15   cage retainer, cage or valve body, depending upon the valve design.